



**PROJECT IDENTIFICATION FORM (PIF)**  
**PROJECT TYPE: Full-sized Project**  
**TYPE OF TRUST FUND: GEF Trust Fund**

**PART I: PROJECT IDENTIFICATION**

Project Title:	Nationally Appropriate Mitigation Actions in the Energy Generation and End-Use Sectors in Peru		
Country(ies):	Peru	GEF Project ID: <sup>1</sup>	4884
GEF Agency(ies):	UNDP	GEF Agency Project ID:	4679
Other Executing Partner(s):	Ministry of Environment, Ministry of Mines and Energy	Submission Date:	March 14, 2012
		Resubmission Date:	April 11, 2012
		Resubmission Date:	April 12, 2012
GEF Focal Area (s):	Climate Change	Project Duration (Mos.)	48
Name of parent program (if applicable):		Agency Fee (\$):	450,000
• For SFM/REDD+ <input type="checkbox"/>			

**A. FOCAL AREA STRATEGY FRAMEWORK<sup>2</sup>:**

Focal Area Objectives	Expected FA Outcomes	Expected FA Outputs	Trust Fund	Indicative Grant Amount (\$)	Indicative Co-financing (\$)
CCM-2	Sustainable financing and delivery mechanisms established and operational	Designed and implemented NAMAs in the energy end-use sector	GEFTF	1,225,000	12,625,000
CCM-3	Favorable policy and regulatory environment created for renewable energy investments	Designed and implemented NAMAs in the energy generation sector	GEFTF	1,225,000	12,625,000
CCM-6	Human and institutional capacity of recipient countries strengthened	Countries receiving GEF support for NAMAs.	GEFTF	1,850,000	3,200,000
Sub-Total				4,300,000	28,450,000
Project Management Cost <sup>3</sup>			GEFTF	<b>200,000</b>	1,000,000
<b>Total Project Cost</b>				4,500,000	29,450,000

**B. PROJECT FRAMEWORK**

<sup>1</sup> Project ID number will be assigned by GEFSEC.

<sup>2</sup> Refer to the reference attached on the [Focal Area Results Framework](#) when filling up the table in item A.

<sup>3</sup> GEF will finance management cost that is solely linked to GEF financing of the project. PMC should be charged proportionately to focal areas based on focal area project grant amount.

**Project Objective: To support the government of Peru in the development and implementation of National Appropriate Mitigation Actions in the energy sector<sup>4</sup> to achieve the country GHG emission reduction voluntary target.**

<b>Project Component</b>	<b>Grant Type</b>	<b>Expected Outcomes</b>	<b>Expected Outputs</b>	<b>Trust Fund</b>	<b>Indicative Grant Amount (\$)</b>	<b>Indicative Cofinancing (\$)</b>
1. Business-as-usual GHG emission baseline	TA	Established national and sub-national GHG emission BAU reference baseline for the energy generation and end-use sectors	<ul style="list-style-type: none"> <li>- Established sub-national (at the Regional level) and sub-sectoral GHG inventories for the energy generation and end-use sectors</li> <li>- Established and operational national and sub-national energy GHG inventory system</li> <li>- Defined and established national and sub national reference baseline for the energy generation and end-use sector and sub sectors</li> </ul>	GEFTF	250,000	400,000
2. Mitigation options for the energy generation and end-use sectors	TA	Prioritized feasible NAMAs are funded and implemented	<ul style="list-style-type: none"> <li>- Developed and published detailed marginal abatement cost curves for the energy generation and end-use sector</li> <li>- Completed comprehensive barrier analysis for mitigation options in the energy generation and end-use sector</li> <li>- Identified and analyzed national appropriate mitigation actions               <ul style="list-style-type: none"> <li>- Prioritized feasible NAMAs</li> </ul> </li> <li>- Established and validated national voluntary emission reduction targets in the energy generation and end-use sector and sub-sectors</li> <li>- Fully capable and qualified private and public sector entities in the implementation of climate change mitigation programmes</li> <li>- Fully capable and qualified private and public sector entities in the design of</li> </ul>	GEFTF	600,000	800,000

<sup>4</sup> The energy sector refers collectively to the energy generation and energy end-use sectors in Peru.

			<p>mitigation programmes, and in the identification and sourcing of funding for such programmes.</p> <ul style="list-style-type: none"> <li>- Completed Factsheets of potential NAMAs in the energy generation and end-use sector</li> <li>- Four designed programs or projects for the implementation of selected prioritized feasible NAMAs in the energy generation and end-use sub-sectors</li> </ul>			
3. Design and implementation of NAMAs in the energy generation and end-use sectors	TA	Entities in the various energy generation and end-use sectors are implementing identified feasible NAMAs and contributing to the achievement of Peru's voluntary mitigation target	<ul style="list-style-type: none"> <li>- Developed and enforced national strategy for the implementation of mitigation actions in the selected energy generation and end-use sub-sectors.</li> <li>- Established and operational multi-sectoral policy dialogues on potential instruments for the implementation of NAMAs in the energy end-use sectors</li> <li>- Defined and approved policy and financial tools to support the implementation of the mitigation actions programme in the energy generation and end-use sector, including fiscal incentives, feed in tariffs, concessional credits, guarantee facility and other options.</li> <li>- Established and operational coordination mechanism between energy generation and end-use sub sector stakeholders</li> <li>- Established public/private partnerships for the implementation of NAMAs</li> <li>- Analyzed, published and disseminated lessons learned from the implementation of the pilot NAMAs</li> </ul>	GEFTF	1,000,000	5,000,000
	Inv			<ul style="list-style-type: none"> <li>- Established and operational mechanisms for the</li> </ul>	GEFTF	1,450,000

			implementation of four NAMAs in the energy generation and end-use sector, with at least one NAMA utilizing carbon market mechanisms. - Four implemented NAMAs in the energy generation and end-use sector, with at least one NAMA utilizing carbon market mechanisms.			
4. MRV system and national registry for mitigation actions in the energy generation and end-use sectors	TA	Accurate measurement and accounting of actual GHG emission reductions from mitigation actions in the energy end-use sectors	<ul style="list-style-type: none"> <li>- Established and operational national registry mechanism for mitigation actions in the energy end-use sector</li> <li>- Established and operational coordination mechanism between the MINEM and the MINAM for emission reduction accounting in the energy generation and end-use sector</li> <li>- Key parameters (quantitative and qualitative) to be monitored defined for the selected NAMAs.</li> <li>- MRV Committee established for the selected NAMAs</li> <li>- Monitoring plan designed and implemented for the selected NAMAs</li> <li>- Developed National MRV guideline and standard methodologies for the selected subsectors</li> <li>- Designed and implemented MRV system for the selected NAMAs.</li> <li>- Fully capable and qualified local technical professionals in the conduct of MRVs</li> </ul>	GEFTF	1,000,000	2,000,000
Sub-Total					4,300,000	28,450,000
Project Management Cost <sup>5</sup>					200,000	1,000,000
<b>Total Project Costs</b>					<b>4,500,000</b>	<b>29,450,000</b>

**C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, (\$)**

<sup>5</sup> Same as footnote #3

Sources of Cofinancing	Name of Co-financier	Type of Cofinancing	Amount (\$)
National Government	Government of Peru	Unknown at this stage	24,650,000 <sup>6</sup>
National Government	Government of Peru	In-kind	1,000,000
Local Government	Regional Governments	In-kind	400,000
Bilateral Aid Agency (ies)	Swiss Agency for Development and Cooperation (CCPlan)	Grant	750,000
Foundation	The Children's Investment Fund	Grant	750,000
GEF Agency	UNDP	Grant	1,550,000
Other Multilateral Agency (ies)	IADB (NUMES)	Grant	350,000
<b>Total Co-financing</b>			<b>29,450,000</b>

**D. GEF/LDCF/SCCF/NPIF RESOURCES REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY: N.A.**

**PART II: PROJECT JUSTIFICATION**

**A. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:**

**A.1.1. The GEF focal area/LDCF/SCCF strategies /NPIF Initiative:**

The project is consistent with GEF Climate Change Mitigation Objective 6 – Support Enabling Activities under the Convention, Objective 2 - Promote market transformation for energy efficiency in industry and the building and Objective 3 – Promote investment in renewable energy technologies. At COP 17 in Durban, the Parties recognized “the need for support for enabling activities to assist developing country Parties in the identification and preparation of nationally appropriate mitigation actions for submission to the registry, and support for their implementation” (FCCC/AWGLCA/2011/L.4). In this line the Government of Peru is requesting support for the definition, design, and implementation of NAMAs (CCM-6) in the energy generation (CCM-3) and end-use (CCM-2) sector with the objective of achieving the country’s GHG emission reduction voluntary target.

**A.1.2. For projects funded from LDCF/SCCF: the LDCF/SCCF eligibility criteria and priorities: N.A.**

**A.1.3 For projects funded from NPIF, relevant eligibility criteria and priorities of the Fund: N.A.**

**A.2. National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAS, NAPs, NBSAPs, national communications, TNAs, NIPs, PRSPs, NPFE, etc.:**

The project is fully linked to Peru’s National Communications to the UNFCCC. The Second National Communication submitted to the UNFCCC in 2011 establishes national level GHG inventories and identifies key sectors for domestic mitigation activities. This project builds upon this framework to identify and implement Nationally Appropriate Mitigation Measures in the energy generation and end-use sector.

<sup>6</sup> This National Government co-financing is an approved IDB loan for implementing the NUMES. It will be used to support this NAMA project, through technical assistance and direct investment, with the objective of reaching the government’s emission reduction targets.

The project builds upon Peru's formal communication to the UNFCCC expressing its willingness to implement Nationally Appropriate Mitigation Measures and to establish voluntary mitigation targets. Please refer to attached communication letter and the detailed description in section B.1.

Peru has not conducted a GEF National Portfolio Formulation Exercise to date.

## **B. PROJECT OVERVIEW:**

### **B.1. Describe the baseline project and the problem that it seeks to address:**

#### ***International Context of Nationally Appropriate Mitigation Actions (NAMAs)***

The concept of Nationally Appropriate Mitigation Actions was introduced in the Bali Action Plan in 2007 (Decision 1 CP/13). The parties to the United Nations Framework Convention on Climate Change (UNFCCC) called for "Enhanced national/international action on mitigation of climate change" including "Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner" (paragraph 1bii).

In the Cancun Agreements reached on December 11 2010, the Parties further agreed that "developing country Parties will take nationally appropriate mitigation actions in the context of sustainable development, supported and enabled by technology, financing and capacity-building, aimed at achieving a deviation in emissions relative to 'business as usual' emissions in 2020." (Paragraph 48). Likewise, the agreements took note of the first NAMAs formally communicated by the parties (paragraph 49). The Cancun Agreements also differentiate between NAMAs that are domestically supported and internationally supported, specifying that both are subject to being measured, reported and verified domestically but that the latter, will be subject to international measurement, reporting and verification (MRV).

#### ***Peru's voluntary mitigation targets***

Since the development of the NAMA concept, Peru has clearly expressed a willingness to participate in the development and implementation of voluntary mitigation actions. Peru has already presented its intentions to implement NAMAs through two formal communications to the UNFCCC, as described below.

On June 21 2010, the Government of Peru submitted its first voluntary targets to the UNFCCC, in a communication that expressed "the firm willingness of its government to strengthen the collective action to mitigate climate change through the development of a sustainable and low-carbon economy" (FCCC/AWGLCA/2011/INF.1), specifying "that for the development and implementation of its mitigation actions it requires support from the international community through the range of financial and cooperative mechanisms available".

In this letter, the following voluntary targets were communicated (unofficial translation, please refer to original Spanish version in annex):

- (a) The reduction to zero of the net deforestation of primary or natural forests by 2021;
- (b) The modification of the current energy matrix, so that by 2020 renewable energy

- (nonconventional energy, hydropower and biofuels) represents at least 33 per cent of the total energy consumed by the country;
- (c) The design and implementation of measures which allow the reduction of emissions caused by the inappropriate management of solid waste.

In a subsequent communication to the UNFCCC sent on July 25 2011 (Letter No 055-2011 DVMDERN/MINAM), the Government of Peru further refined and reaffirmed these three voluntary mitigation targets and set them for the year 2021, symbolically linked to the Bicentennial anniversary of independence. The targets are estimated using the year 2000 as baseline, building upon the Second National Communication to the UNFCCC (SNC) and the 2000 Greenhouse Gas Inventory. The revised proposed mitigation actions remain targeted at three sectors; land use, land use change and forestry (LULUCF), energy, and solid waste management.

The redefined voluntary mitigation targets for 2021 as expressed in this communication are the following (unofficial translation, please refer to original Spanish version in annex):

- a. Zero net emissions in the LULUCF sector - This target seeks to reduce the emissions by approximately 45% in relation to the year 2000, potentially avoiding the emission of 50 M TCo<sub>2e</sub>, through the conservation of 54 million ha of primary forest and complementary measures.
- b. Modify the national energy matrix so that non-conventional renewable energy and hydro energy represent at least 40% of the total energy consumed in the country - This is to be achieved through the combination of the use of renewable energy (solar, wind, biomass, tidal and geothermal) and increased energy efficiency to reduce the use of fossil fuels. This will represent an emission reduction in this sector of approximately 28% in relation to the year 2000, potentially avoiding the emission of 7 M TCo<sub>2e</sub>.
- c. Methane capture and use from adequate urban solid waste disposal - To achieve this target, a national program will be launched to construct sanitary landfills and eventual complementary installations in 31 large and medium cities, which will result in a reduction of approximately 7 M TCo<sub>2e</sub>.

The communication also expresses the need to “count on the firm support of the international community through the financial and cooperation mechanisms established at COP 16, as well as of those mechanisms that are currently functioning and available.” In this context, the Government of Peru is requesting GEF support for the design and implementation of Nationally Appropriate Mitigation Actions in the energy generation and end-use sector to achieve the related country GHG emission reduction voluntary target described above. In parallel, other ongoing initiatives are supporting the country to structure and achieve the targets of the LULUCF and solid waste management (please refer to section B.6. for further information on these initiatives).

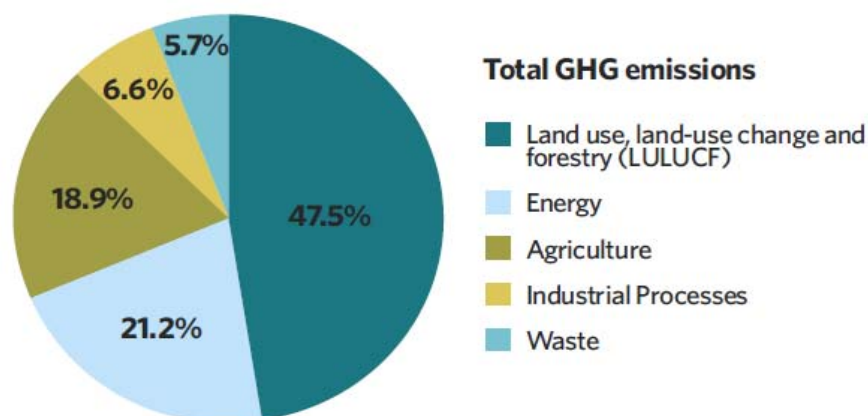
### ***Peru’s energy sector***

The energy sector is the second largest source of GHG emissions in Peru, after LULUCF, with 21.2% of the country’s total GHG emissions (25,400 GgCO<sub>2e</sub>/2000). (Note: This is based on the latest official GHG inventory of 2000, presented in the Second National communication to the UNFCCC. Peru is currently initiating the elaboration of the third NCCC which will include an updated national GHG inventory for 2008)

GHG emissions from the energy sector have had a significant increase of 15% between 1994 and 2000 (2NCCC). The projections realized for the 2NCCC estimates that the emissions from the energy sector will almost triplicate in 50 years (2000-2050).

Please see Annex I for a more detailed analysis of Peru’s energy sector

Figure 1: Percentage of GHG Emissions by Categories



Source: 2NCCC MINAM

Figure 2: Projection of GHG emissions from the energy sector (2000-2050)



Source: 2NCCC MINAM

***Legal framework to promote renewable energy and the efficient use of energy***

The achievement of Peru’s voluntary targets requires a major transformation of the country’s energy matrix. The Government of Peru is actively promoting the development and implementation of policies and regulations that support such a transformation. While most of these initiatives pre-date the communication of Peru’s voluntary targets to the UNFCCC, they have regained momentum and importance in the context of Peru’s formal commitment to emission reductions.

The Ministry of Energy and Mines (MINEM) is responsible for the national energy policy and the design of policy instruments for the mining and energy sectors. Amongst its objectives are “promoting the sustainable development and competitiveness of the



energy sector, prioritizing private investment and the diversification of the energy matrix”, and “promoting the preservation and conservation of the natural environment by the energy and mining industries” (MINEM). To reach this objective the government of Peru has put in place a series of policies and regulations which are described below:

#### *Law and bylaw for the Promotion of the Efficient Use of Energy*

The law for the Promotion of the Efficient Use of Energy (Law N° 27345) was adopted in the year 2000 and is the first policy action taken to support energy efficiency in Peru. In this law the Ministry of Energy and Mines (MINEM) is appointed as the competent authority to promote the efficient use of energy by creating a culture for the rational use of energy, the elaboration and implementation of sector-wide Energy Efficiency (EE) programs, the promotion of EE consultancy services and ESCOs and the implementation of EE labeling of energy consuming equipment and appliances. Only in 2007, the bylaw (D.S. N° 053-2007-EM) for the implementation of this energy efficiency law was approved. The bylaw focus on the following four lines of actions:

- Generation of an energy efficiency culture through awareness campaigns and training;
- Implementation of sectoral energy efficiency programmes;
- Formulation of policy and planning regarding EE;
- Introduction of relevant Regulations, including definition of ‘energy demand indicators and methodology for monitoring’ and technical regulations for standards and labeling of selected appliances.

#### *National Energy Policy 2010-2040*

In 2010, the Peru National Energy Policy for the period 2010-2040 was approved (D.S. N°064-2010-EM). Two of the principal objectives are to support a diversified energy matrix with emphasis on renewable sources of energy and energy efficiency, and to develop an energy sector with minimal environmental impact and low carbon emissions in the framework of sustainable development.

#### *National Plan for Environmental Action*

In 2011 the Government of Peru approved the National Plan for Environmental Action 2011-2021 (D.S N° 014 - 2011 – MINAM). The PLANAA is the long term national planning instrument formulated on the basis of the National Environment Policy; it contains the environmental priority targets to be reached in the next 10 years. It’s divided in 7 areas: water, solid waste, air, forests and climate change, biological diversity, mines and energy, and environmental governance.

The strategic action 4.3 promotes economic growth with reduced GHG intensity. In this context, the 2012 target is to have an updated GHG baseline and to reach a 1:1 ratio between GHG emissions and growth in GDP. By 2017 the target is to reduce this ratio below 1:1, and by 2020 the target is to further reduce the ratio from the one registered in 2017.

Strategic action 6.3 is to manage the natural resources for energy uses in a sustainable manner. The 2012 target is to develop a reference baseline of the renewable natural resources that can be used as a source of energy; and to formulate and approve the strategic environmental evaluation of the planning process for the New Sustainable Energy Matrix (NUMES). By 2017, all the programmes and projects that derive from the

NUMES must implement the recommendations of the strategic environmental evaluation, and by 2020 they must demonstrate a sustainable management of the renewable natural resources as a result of the implementation of the strategic environmental evaluation.

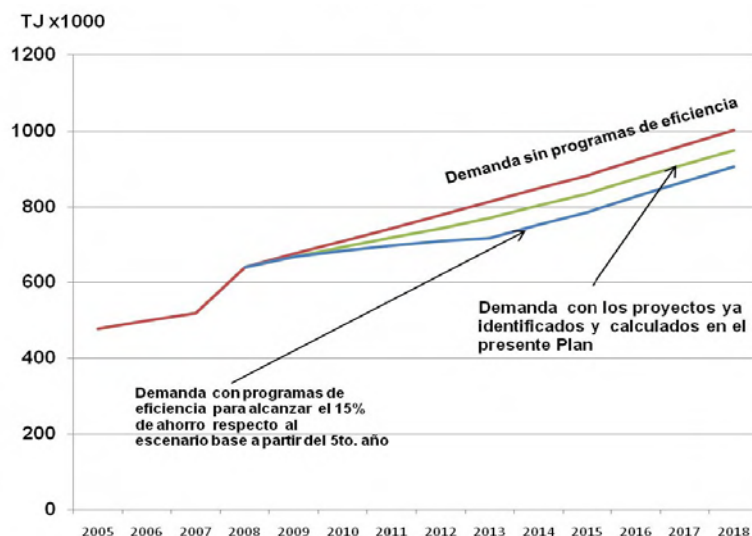
*Law and bylaw for the promotion of biofuels*

The law for the promotion of biofuels (Law 28054) was approved in 2003 and set the legal basis for the production and commercialization of biofuels. Its bylaw was adopted in 2008 and establishes that from 2010 all the gasoline commercialized in the country should contain a percentage of biofuels of 7.8%.

*Reference plan for the efficient use of energy (2009-2018)*

In compliance with the Energy Efficiency Law, the MINEM approved in 2009 the reference plan for the efficient use of energy for the period 2009-2018 (R.M. N° 469-2009-EM/DM). The objective of this plan is to reduce the energy consumption by 15% based on the projected energy demand. The successful implementation of this plan could achieve an estimated GHG emission reduction of 35 million TCO<sub>2e</sub> during the period 2009-2018. To ensure its appropriate implementation, in 2010 the MINEM established the Directorate of Energy Efficiency (D.S. N° 026-2010-EM), with the mandate of promoting the rational and efficient use of energy and sustainable development

Figure 3: Evolution of energy demand without and with implementation of the Referential Plan of Energy Efficiency



*Red line: business-as-usual*

*Green line: Demand with implementation of projects and activities proposed in the Plan*

*Blue line: Full achievement of target of 15% energy savings from the 5th year onwards*

Source: MINEM (2009)

***Peru CDM experience, a stepping stone for scaled up market mitigation mechanism***

Peru has accumulated significant experience with mitigation project through the Kyoto Protocol (KP) Clean Development Mechanism during the last ten years. The government of Peru has ratified the UNFCCC in 1993 and the KP in 2002. The same year of the

ratification of the PK it established its Designated National Authority (D.S. No 095-PCM-2002). The MINAM is the DNA and the National Environmental Fund (FONAM) serves as the promotion entity.

To date, Peru has registered 27 CDM projects expected to reduce 3,244,929 TCO<sub>2</sub>e annually (cdm.unfccc.int, March 2012). The majority of the projects are hydroelectric, with 18 project registered, followed by landfill gas with 3 projects registered. The other projects are two fossil fuel switch (oil to gas and coal to gas), one methane avoidance in wastewater, one reforestation, one supply side energy efficiency (single cycle to combined cycle) and one biomass energy. Peru is also home of the first efficient cook stove Programme of Activity (PoA) registered in the voluntary market through the Gold Standard (Qori Q'oncha programme).

This technical knowledge and understanding of mitigation activities gathered by the private and public sector through concrete project experiences and the capacity development programmes executed in Peru during the last 10 years (World Bank CF-Assist, UNEP CD4CDM and UNDP Carbon 2012) serves as a stepping stone for post-2012 scaled up market mechanisms including the exploration of credited NAMAs and sectoral market mechanisms.

### **Baseline Project: From project based mitigation actions to national voluntary mitigation targets, sectoral approaches and NAMAs**

Through the abovementioned policies supportive of renewable energy and energy efficiency, the Government of Peru is demonstrating a significant commitment to implementing national mitigation measures and developing a transition toward a low emission economy while sustaining steady economic growth. The voluntary mitigation targets submitted by Peru to the UNFCCC represent an initial effort by the country to quantify its willingness to contribute to climate change mitigation and to launch the process of decoupling economic growth and greenhouse gas emissions. However, the Government of Peru is conscious that its initial voluntary mitigation targets need to be refined, and that its mitigation actions need to be structured on a solid foundation based on reliable information, well established baselines and accurate projections.

The proposed project builds upon a strong national commitment consisting of the country's formal declaration that it will develop and implement Nationally Appropriate Mitigation Actions in the context of the UNFCCC. The establishment of an initial target for the energy sector provides a clear framework for the project, as the country's objective is to modify the national energy matrix so that non-conventional renewable energy and hydro represent at least 40% of the total energy consumed in the country.

The MINAM and MINEM acknowledge, however, that reaching this target and reversing the tendency of GHG emissions in the energy sector requires additional efforts including the definition of concrete Nationally Appropriate Mitigation Actions for the energy generation and end-use subsectors. Likewise, implementation instruments need to be designed and implemented to reach these targets, in full coordination with all relevant stakeholders. In this context, the Government of Peru is leading an effort, with the participation of multiple national and international stakeholders, to conduct an in depth analytical process that will lead to the implementation of NAMAs to reach its voluntary targets. Currently, there are several planned initiatives that clearly contribute towards this objective, of which the most relevant are described below. The GEF initiative will be

immersed in this context and will have the overall mandate of leading the development of a NAMA framework for the energy generation and end-use sector, both coordinating amongst these initiatives and complementing these actions to ensure the country is fully enabled to implement structured an integrated energy end-use sector NAMAs that allow it to reach its targets.

The initiatives and programmes that make up the baseline projects or activities of the proposed GEF project are presented below:

*Promotion of investment in electricity generation with renewable energy sources*

The law for the promotion of investment in electricity generation with renewable energy sources (D.L. 1002) was adopted in 2008 and declares the use of renewable energy a national interest and a public necessity. It defines renewable energy as biomass, wind, solar geothermal and tidal energy as well as hydroelectric facilities with an installed capacity below 20MW. The law states that the national energy and mining supervising entity, OSINERGMIN, will have preferential treatment for renewable energy projects when tendering for additional capacity.

The Bylaw for the generation of electricity with renewable energy (D.S. N° 050-2008-EM), also approved in 2008, establishes the regulation of the tendering process for renewable energy in charge of OSINERGMIN and includes incentives for renewable energy, principally:

- Priority for the dispatch of electricity and access to the transmission and distribution network;
- Long term stable tariffs established through biddings;
- Guaranteed purchase of the total electricity produced.

Two renewable energy tender processes were realized between 2010 and 2011, the first for a total capacity of 1GW and the other for 410 MW. Neither reached the targeted total capacity. The results were the following:

Source	Price (US\$/MW)		Capacity MW 2010	Capacity MW 2011	Total Capacity, MW
	2010 tender	2011 tender			
Hydroelectric	60	53	180	102	282
Biomass	64	99	27	2	29
Wind	80	69	142	90	232
Solar	221	221	80	16	96
All source of RE			429	210	639

Source: OSINERGMIN

As a result of these two tenders an additional capacity of 639 MW from renewable energy is planned to be installed between 2012 and 2015.

*LECB*

During 2012-2014, UNDP will implement the *Low Emission Capacity Building Global Programme (LECB)* in Peru. This program focuses on the development of a national strategy that decouples carbon emissions from economic growth. This initiative will

strengthen the national GHG inventory system, establishing a national platform to update inventories at the national, sectoral, and sub-national levels. It will also contribute to the development of national MRV systems that comply with national and international standards in the context of NAMA implementation.

#### *CCPlan*

The climate change specialized company Libelula is implementing *the Mitigation Action Plan and Scenarios/ Climate Change into Development Planning (MAPS/CCPlan)* initiative, with the support of the Children's Investment Fund Foundation (CIFF) and the Swiss Agency for Development and Cooperation (SDC). The first phase of this initiative will be executed during the 2011-2013 period, and focuses on strengthening national capacities to develop climate change scenarios and incorporate climate change criteria into national planning processes.

#### *Sub National Green LECRDS*

UNDP is currently implementing the *Sub-National Green Low Emission, Climate Resilient Development Strategy (Sub National Green LECRDS)* in Piura and Tumbes Region, funded jointly by UNDP, the Government of Ontario, and the regional governments of Piura and Tumbes. This initiative focuses on sub-national planning processes to develop Integrated Regional Climate Change Plans. The project will develop detailed socio-economic analyses to identify efficient, cost effective mitigation measures that can be implemented in the short, medium and long term.

#### *NUMES*

Peru is developing the *New Sustainable Energy Matrix (NUMES)* programme, financed by a loan and a technical assistance grant from the Inter American Development Bank (IADB). The NUMES programme supports the development of a new sustainable energy matrix that is based on a comprehensive approach to technical, economic, environmental, and social considerations, in order to maximize the benefits derived from energy resources in a sustainable manner. As such, it is essential to integrate this initiative to the energy end-use sector NAMA framework to ensure that it is fully aligned with the country's energy end-use sector voluntary mitigation targets.

#### *SMMI-LAC*

A final process that contributes to the development of energy end-use sector NAMAs is the UNDP *Sectoral Market Mechanisms Initiative (SMMI-LAC)*. This program supports emission reduction efforts on a larger, cost-effective scale and is expected to facilitate the development of possible domestic market instruments which could be linked to international markets. The main objective of SMMI-LAC is to provide tailored capacity development for scaled up, cost-effective mitigation activities in LAC countries. SMMI-LAC main outputs include: (1) Enhanced ability of Governments to access global carbon market and readiness for using sectoral market mechanisms, (2) Development of a reference baseline and performance standards for at least one sector in each participating country, and (3) Implementation of the sectoral mechanism. The programme will initially focus at the sub-national level, where defined boundaries can offer a good starting point to trial sectoral mechanisms

The policies, laws, regulations and programmes that the Government of Peru has established to transform the national energy mix clearly demonstrate the country's willingness and capacity to promote a low emission development path.

**B. 2. Incremental /Additional cost reasoning: describe the incremental (GEF Trust Fund/NPIF) or additional (LDCF/SCCF) activities requested for GEF/LDCF/SCCF/NPIF financing and the associated global environmental benefits (GEF Trust Fund/NPIF) or associated adaptation benefits (LDCF/SCCF) to be delivered by the project:**

At COP 17, in Durban, the Parties recognized “the need for support for enabling activities to assist developing country Parties in the identification and preparation of nationally appropriate mitigation actions for submission to the registry, and support for their implementation”. (Report of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention - Draft decision [-/CP.17]) In this line the Government of Peru is requesting support for the definition, design, and implementation of NAMAs in the energy generation and end-use sector with the objective of achieving the country’s GHG emission reduction voluntary target.

This GEF project will strengthen the capacity of the government of Peru to identify and structure NAMAs in the energy sector, as well as to conduct the upstream studies and actions necessary to refine and reach its voluntary mitigation target. As described in the previous section, there are numerous ongoing initiatives that contribute towards this goal. However, there is a strong need to integrate these efforts under a structure that focuses explicitly on developing and implementing energy generation and end-use sector NAMAs. The GEF project is designed specifically with the objective of leading the energy generation and end-use sector NAMA development and implementation process. The project defines a framework to formulate NAMAs which integrates all ongoing activities so that they contribute efficiently towards this objective. Furthermore, the GEF project will carry out the additional activities within this framework necessary to the establishment of energy generation and end-use sector NAMAs, and will pilot the implementation of NAMAs in energy sub-sectors, applying policy and market mechanisms for the achievement of Peru’s energy mitigation goals.

The project will contribute to the achievement of the mitigation targets, established voluntarily by the government of Peru and communicated to the UNFCCC, for the generation and energy end-use sector, which are estimated to reduce emissions by approximately 28% compared to the year 2000 baseline, avoiding the emissions of approximately 7 million tons CO<sub>2</sub>eq by 2021. The implementation of the four demonstration NAMAs (component 2) in the energy generation and end-use sector is expected to contribute to reach 30% of the targeted emission reductions, which would avoid the emission of approximately 2 million tons CO<sub>2</sub>eq.

The project is structured into four components, which are the necessary steps to refine Peru’s voluntary mitigation targets and trigger an enabling framework for the identification and implementation of NAMAs in the energy generation and end-use sector and sub-sectors.

**Component 1: Establishment of business-as-usual GHG emission baseline**

This component will focus on establishing a GHG business-as-usual reference baseline for the energy generation and end-use sector and subsectors. This will enhance and complement the national GHG inventory for the year 2005 that will be conducted through the Third National Communication to the UNFCCC (TNC). While the TNC will focus on national, sector level inventories, this project will develop more detailed sub-national (at the regional level) and sub-sectoral GHG inventories for the energy

generation and end-use sector focusing on identifying potentials NAMAs. In addition to the preparation of these inventories, a system will be established to facilitate the gathering of information and the update of the sub-national and sub-sectoral GHG inventories for the energy generation and end-use sector and enhance their quality. This system will allow for a much more proactive, accurate and timely analysis of energy generation and end-use sector GHG emissions, and will also support the Government of Peru to comply with the requirements of the submission of biennial update reports. The sub-national GHG inventories will be in line with the facilitation of the decentralization process for the planning and implementation of mitigation actions through the 25 regional governments, in line with the Government of Peru decentralization strategy (CEPLAN).

### **Component 2: Identification of mitigation options for the energy generation and end-use sector**

This component will support the Government of Peru in the identification of appropriate mitigation options in the energy generation and end-use sector to reach the established voluntary mitigation target. A top down and bottom up approach will be used to refine and validate the national voluntary mitigation target for the energy generation and end-use sector, evaluating the actions required to achieve the established target (top down) while in parallel a sector by sector mitigation options and potential evaluation will be performed (bottom up). A detailed marginal abatement cost curve for the energy generation and end-use sector will be prepared, including cost-benefit analysis of the available options as well as feasibility analysis of their implementation.

National and sub-national appropriate mitigation actions will be identified and assessment of costs and benefits and feasibility will be conducted. Fact sheets of the identified will be prepared and gathered in a comprehensive database. This database will also serve as a tool to prepare models and scenarios of feasible deviations from the Business-as-Usual emission reference baselines, including the associated costs and technology needs for doing so. From this pipeline of NAMAs, a prioritization exercise will be performed, including the definition of criteria and procedure for the prioritization and selection of NAMAs, and a short list of NAMAs will be established.

NAMAs will be separated in three categories depending on their characteristics: Unilateral NAMAs, Supported NAMAs and Credited NAMAs. Unilateral NAMAs will include mitigation actions that can be implemented unilaterally by the country, such as measures that have negative costs but need policy reforms to be promoted. The category of Supported NAMAs will be composed of actions that need significant technology transfer and that may have higher costs or entry barriers than high emission technologies or current common practice. The option of Credited NAMAs will also be explored for mitigation actions that could be encouraged through market mechanisms at the national and sub-national level, such as sectoral crediting and sectoral domestic voluntary carbon markets.

The implementation of NAMAs and corresponding MRV systems will require a strong capacity and readiness of large set of diverse stakeholders, including civil society, the private sector, professional associations, academics, sub-national governments and public institutions. The participation of these stakeholders in the NAMA development process is essential to ensure that the NAMAs are designed with full consideration of national circumstances. The project will strengthen the capacity of the required stakeholders in

the design and implementation of mitigation programmes and the identification of funding sources and options, as well as MRV requirements.

Updates on the evolution of the international framework for climate change mitigation and the carbon market will be provided to the public and private sector to raise awareness on the evolution of the post-2012 framework and to adapt their mitigation programmes and actions in line with the evolution of international guidance and requirements. A systematic programme of workshops, materials and outreach will be developed to build awareness and technical capacity inside governments and industry.

### **Component 3: Design and implementation of NAMAs in the energy generation and end-use sector**

From the results obtained in the second component, four mitigation actions will be prioritized in the energy subsectors and will be structured into detailed NAMAs, including the identification and establishment of the instruments that will be used for their implementation. A study to analyze the available policy, regulatory and financial tools to support the implementation of the identified mitigation actions and to estimate their potential impact on emissions will be conducted. The instruments to be assessed will include fiscal incentives, feed in tariffs, concessional credits, guarantee facilities and other mechanisms that can promote mitigation actions.

Policy dialogue on the potential instruments for the implementation of NAMAs in the energy generation and end-use sector will be supported to ensure a broad stakeholder participation in the selection of appropriate policy instruments for the implementation of NAMAs.

The design of the NAMA will include the selection of the mitigation actions, the establishment of the baseline, the definition of the boundary (geographic and energy sub-sector), the evaluation of emission reductions potential, the establishment of the timeframe to achieve the projected emission reductions, the definition of the monitoring methodology, the selection of the appropriate instruments for its implementation and the evaluation of the required funding from different sources. These are the core elements necessary for the design of the NAMA, however a more detailed framework will be established during the PPG phase.

Once the four NAMAs selected for the energy generation and end-use sector are structured and the corresponding implementation instruments designed, the NAMAs will be implemented, including the MRV system that will be developed in component 4. The GEF funds for the proposed project will not be used to finance any investments associated with the implementation of the NAMAs, but will be limited to activities for ensuring the appropriate implementation of the policy and financial instruments designed for each NAMA and the corresponding energy generation and end-use sector. It is important to note that this is likely to require the application of highly innovative mechanisms in the Peruvian context, such as the issuance of emission allowances, establishment of domestic cap and trade systems, or other cutting edge market mechanisms. As such, the GEF project support is essential to ensure the appropriate application of such instruments in the Peruvian context.

The investments required for the implementation of NAMAs will be funded through a combination of domestic private and public sector financing, international sources of



support, and revenues raised through the implementation of market mechanisms. The combination and sequencing of the appropriate sources of financing will be essential to ensure an effective NAMA implementation. Unilateral NAMAs will be implemented with domestic sources of financing, while Supported and Credited NAMAs will be implemented by a combination of domestic resources, international sources of financing for climate change mitigation, and revenues raised through international carbon markets. In the context of this project, the \$25 million allocated by the Government of Peru to the New Sustainable Energy Matrix (NUMES) initiative, as described in the previous section, ensures public finance participation. As the NAMAs design and structure are finalized, additional sources of financing will be identified and leveraged for their implementation including public funds, international cooperation, investment from the private sector and carbon finance. The designed NAMAs will serve as a basis to leverage finance.

For at least one of the selected mitigation actions, potential scaled up mitigation market mechanisms will be explored and designed. Different options will be evaluated, in particular sectoral crediting and voluntary sectoral domestic carbon markets at the national and sub-national levels. The sectoral crediting mechanism will require the establishment of sectoral targets and dynamic baseline levels. Under a sectoral crediting mechanism, a sectoral emission target, set below the business as usual (BAU) emissions, will be established, to be accomplished in a given timeframe through the implementation of domestic policies implemented by the government of Peru. Through an agreement previously established with an Annex I country, the Government of Peru would issue, at the end of the period agreed (ex post), carbon credits for any additional emission reductions below the established targets. This approach is an effort to move beyond project-based offsetting mechanisms such as CDM.

An important aspect of this project is the learning by doing component. The international framework for climate change is in constant evolution and NAMAs are a central part of discussions of the future framework. This project will produce key bottom up knowledge on the requirements for effective NAMA implementation and will generate important lessons for the international community as the process of defining international guidance for NAMAs and MRV continues to evolve.

#### **Component 4: MRV system and national registry for mitigation actions in the energy generation and end-use sector**

As part of the process of establishing NAMAs, the MINAM, as the governing body in Peru for climate change, will be in charge of setting a national registry mechanism for mitigation actions. The registry will be linked to the database of potential mitigation actions that will be established through the component 2. A specific section of the registry will be for actions implemented in the energy end-use sector. Close coordination will be carried out between the MINEM and the MINAM in the establishment of the registry of mitigation actions for the energy generation and end-use sector.

Furthermore, specific measurement, reporting and verification systems will be established and implemented for the four NAMAs selected through the component 3 of the project. The MRV systems must be designed to comply with internationally accepted standards and, in the case of Supported and Credited Namas, must be accessible to international MRV systems established through the UNFCCC or by countries providing financial support to NAMA implementation.

Key parameters to be monitored will be selected, both quantitative and qualitative. This will allow to monitor precisely the mitigation benefits of the four implemented NAMAs in terms of GHG emission reduction, and additional parameters will be selected to evaluate the cobenefits. A monitoring plan including these parameters will be designed and implemented for the four selected NAMAs in conjunction with the implementation of the mitigation actions. Furthermore, national MRV guidelines and standard methodologies for the selected subsectors will be developed.

An MRV committee will be established for each selected NAMAs that will have the responsibility of measuring and collecting data (M), communicate results based on the data collected (R) and verifying the data (V). The committee will also identify specific needs of capacity development for local technical professionals in order to ensure a quality MRV of the NAMAs.

Training will be organized on MRV requirements and procedures to enhance technical capacity and ensure the availability of capable and qualified local technical professionals to conduct MRV for NAMAs in the energy generation and end-use sector.

**B.3. Describe the socio-economic benefits to be delivered by the Project at the national and local levels, including consideration of gender dimensions, and how these will support the achievement of global environment benefits (GEF Trust Fund/NPIF) or adaptation benefits (LDCE/SCCF). As a background information, read [Mainstreaming Gender at the GEF.](#):**

The development of Nationally Appropriate Mitigation Actions in Peru consists of the identification and implementation of suitable national mitigation options that foster national sustainable development. As such, the project is embedded in a context in which the delivery of national socioeconomic benefits is equally important to the country's contribution to GHG Emission Reductions. The voluntary nature of NAMA development and implementation ensures that the Government of Peru will seek to implement mitigation measures that have a clear positive impact on the national economy and are fully aligned with national sustainable development goals. The identification of cost effective mitigation measures, and their implementation as NAMAs will provide a clear demonstration of effective mechanisms to integrate national sustainable development and greenhouse gas mitigation goals. Furthermore, this project forms part of Peru's ongoing process of defining a Green, Low Emission, Climate Resilient Development strategy, which is a broader process to develop a sustainable, climate- smart development path for the country.

The specific gender dimensions of the socio-economic benefits to be derived from this project will be clearly spelled out as sub sectoral analyses are carried about and NAMA profiles are developed. However, the project will fully incorporate the gender dimension in the NAMA design and implementation process. This includes ensuring gender equality in stakeholder consultations, project implementation arrangements and project procurement and recruitment processes. The project will also ensure that specific gender analyses are undertaken for energy topics that are particularly gender sensitive, such as energy access.

**B.4 Indicate risks, including climate change risks that might prevent the project objectives from being achieved, and if possible, propose measures that address these risks to be further developed during the project design:**

Potential risks associated with the project, along with proposed mitigation measures, are listed below.

<b>RISKS</b>	<b>RATING</b>	<b>MITIGATION MEASURES</b>
1. The Government of Peru withdraws its political commitment of voluntary mitigation target.	Moderate	The Government of Peru has demonstrated a constant commitment that has persisted throughout numerous electoral cycles, including the recent change of Government. The formal communication to the UNFCCC establishing initial mitigation targets clearly expresses this commitment to the international community. A high level political involvement will be ensured throughout the implementation of the project and information on the co-benefits of the implementation of the mitigation measures will be broadly communicated to ensure a continuous commitment.
The domestic energy market continues to favor natural gas over renewable energy resources.	Moderate	Peru's significant fossil fuel resources, in particular the recent boom in natural gas development with the exploitation of the Camisea field, have had a significant impact in increasing the fossil fuel share of the energy matrix in Peru. Therefore, there is a risk that, despite the country's willingness to revert this trend, market forces and domestic economic conditions will continue to favor natural gas over other renewable resources. The project will have to confront this risk upfront, providing technically reliable and credible analyses that highlight the costs and benefits of diversifying the energy matrix and supporting renewable energy. It is important to note that the New Sustainable Energy Matrix (NUMES) process being undertaken by Peru ensures that there is a clear national commitment to energy diversification and provides strong support to the project objectives.
Environmental impact of Hydro development	Moderate	It is clear that the development of hydroelectric power is a key component of Peru's energy diversification strategy. In this context, it is important to ensure that all social and environmental impacts are fully assessed and that all projects to be developed are fully aligned with national and international standards in regards to hydroelectric development. The complexity of this process implies that some projects may not be developed and others may be delayed. While this poses a risk that the country's energy diversification agenda may be affected, it is essential to ensure that hydropower development is conducted in a sustainable manner and that local social and environmental safeguards are fully implemented. The project will ensure that all hydro development included in the NAMA framework is fully compliant with international standards.

Climate change impacts	High	The country's commitment to develop renewable energy resources may be affected by changing climate patterns. In particular, climate change is having a significant impact on the availability of hydro resources as glacier retreat continues to accelerate and climate variability phenomena such as "El Niño" y "La Niña" are exacerbated. The project will fully coordinate with Peru's strong climate change adaptation analytical framework to ensure that climate risks are fully incorporated in the energy generation and end-use sector NAMA framework.
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**B.5. Identify key stakeholders involved in the project including the private sector, civil society organizations, local and indigenous communities, and their respective roles, as applicable:**

Given the breath of the energy generation and end-use sector, a diverse set of stakeholders from the public sector, the private sector and civil society will be involved in the project.

Public sector:

- *Ministry of Environment (MINAM)* is the governing body and policy maker for environmental management at the national level. The National Climate Change Committee is presided by the MINAM. It establishes the national guidelines for climate change mitigation and is in charge of ensuring fulfillment of the commitments taken by the country in the UNFCCC. Although the project will be principally implemented by the MINEM, the MINAM will have a key role in the establishment of criteria for the definition of the NAMAs, the development of the NAMA national registry and MRV methodologies, and ensuring an adequate environmental impact of the proposed and implemented mitigation actions. A strong coordination mechanism will be defined between the MINAM and MINEM for the implementation of this project. The distribution of responsibility will be further defined during the PPG.
- *Ministry of Energy and Mining (MINEM)* is the governing body of the energy policy at the national level. The MINEM will implement this project in coordination with the MINAM.
- *Ministry of Economy and Finance (MEF)* defines the national budget and assigns public resources. It has an important role in directing public funds to climate change mitigation actions and ensures that the limited available funding can serve to catalyze investment from the private sector.
- *National Strategic Planning Center (CEPLAN)* has the role to impulse strategic and coordinated planning at all the level of the government (national and sub-national). CEPLAN will have a key role to integrate mitigation actions into national and sub-national plans.
- *Ministry of Production, the Ministry of Transport and Communication, and the Ministry of Housing, Construction and Sanitation* will have a key role in identifying and designing NAMAs in sub-sectors linked with their area of influence.
- *Regional Governments* are in charge of implementing sectoral policies at the regional level. They will have an important role in identifying, designing and

implementing mitigation actions at the sub-national level.

Non-Governmental Organizations:

- *Center for the Conservation of Energy and the Environment (CENERGIA)* is the technical entity that is supporting the government of Peru in the technical implementation of NUMES. CENERGIA will thus have a key role in the structuring of NAMAs for the energy generation and end-use sector and their implementation.
- *National Fund for the Environment (FONAM)* is in charge of promoting public and private investment in plans, project and programmes oriented to improve the environmental quality and the sustainable use of natural resources, as well as to strengthen the capacity for an adequate environmental management. FONAM is also the national promoting entity for the CDM. It will have a key role in promoting the participation and investments of the private and public sector in NAMAs.

Private Sector:

- *Libelula* is a private company that offers climate change consulting services and is the technical entity in charge of implementing the Project MAPS CCPlan.
- Associations representing companies of the private sector related to energy such as *the National Society of Energy and Petroleum, the National Society of Industries, the National Confederation of Private Company and the Chamber of Commerce* will have an important role in the design of the NAMAs and promoting the participation of its members in their implementation.

**B.6. Outline the coordination with other related initiatives**

The project will be closely coordinated with the following initiatives:

- *Enabling the implementation of a REDD program in Peru* is implemented by the MINAM and financed with a grant of the MOORE foundation. This grant will support the preparatory phase of a national strategy to reduce emissions from deforestation, forest degradation, and other forest sector activities (REDD+), as well as the implementation of related REDD+ activities in several regions of Peru. In particular this programme will develop MRV instruments for the forest sector and establish national and sub-national GHG scenarios for the LULUCF sector.
- *Forest Carbon Partnership Facility (FCPF) Readiness Programme* has the objective to strengthen the legal technical and institutional capacity of the government of Peru to implement a REDD Programme.
- *Nordic Ad Hoc Group on Climate Change (NOAK) / Nordic Environmental Finance Corporation (NEFCO) Partnership Initiative* aims to explore and demonstrate how international climate finance can be matched with up-scaled host country mitigation action. For Peru, the selected Pilot Programme targets the waste sector. The Pilot Programme aims at developing a solid waste inventory and at assisting with formulating a national solid waste strategy leading to the elaboration of a detailed solid waste sector related NAMA.
- *JICA-IADB National Program for Municipal Solid Waste Management and*

*Regional plans of Solid Waste Management* - This program is planning the construction of 31 landfills through a CDM Programme of Activity, thus contributing to the achievement of Peru's waste sector NAMA target.

- *GEF Funded energy efficiency projects (UNDP/GEF Energy Efficiency Standards and Labels in Peru and UNEP/GEF Lighting Market Transformation in Peru)* - These projects are targeted at specific energy efficiency markets and will be involved in the broader energy generation and end-use sector NAMA development process led by this initiative. These two GEF projects are implemented by the MINEM and the other three projects by the MINAM, thus coordination will be ensured with the coordination mechanism that will be specifically designed in this project between both institutions for its implementation.
- *CDM Pipeline*. 5 CDM PoAs (2 fossil fuel switch –fuel oil to LPG, 3 Hydro) and 32 CDM project are actually at the validation stage (UNEP Risoe CDM pipeline, March 2012). An assessment will be made on how these activities can be incorporated into NAMAs and avoid double counting of emission reduction.

A national framework to incorporate these projects in a national NAMA coordination structure will be created. This will result in a more coherent national mitigation strategy for the energy sector.

Furthermore, considering that IADB is providing the loan for the NUMES programme part of the baseline project, the project will ensure a close coordination with the IADB. The IADB will be invited to form part of the Project Steering Committee.

## **C. DESCRIBE THE GEF AGENCY'S COMPARATIVE ADVANTAGE TO IMPLEMENT THIS PROJECT:**

### **C.1 Indicate the co-financing amount the GEF agency is bringing to the project:**

As described in section B.1, UNDP is currently starting the implementation of three important initiatives supporting the government of Peru in developing and implementing its low emission development strategy. These programmes constitute an important co-financing to this UNDP-GEF project totaling US\$1,550,000 distributed as described below:

SMMI - US\$500,000

UNDP *Sectoral Market Mechanisms Initiative (SMMI-LAC)* (2012-2015) supports emission reduction efforts on a larger, cost-effective scale and is expected to facilitate the development of possible domestic market instruments which could be linked to international markets. The main objective of SMMI-LAC is to provide tailored capacity development for scaled up, cost-effective mitigation activities in LAC countries. SMMI-LAC main outputs include: (1) Enhanced ability of Governments to access global carbon market and readiness for using sectoral market mechanisms, (2) Development of a reference baseline and performance standards for at least one sector in each participating country, and (3) Implementation of the sectoral mechanism. The programme will initially focus at the sub-national level with a pilot intervention in Peru, where defined boundaries can offer a good starting point to trial sectoral mechanisms.

LECB - US\$600,000

UNDP *Low Emission Capacity Building Global Programme (LECB)* in Peru (2012-2015) focuses on the development of a national strategy that decouples carbon emissions from economic growth. This initiative will strengthen the national GHG inventory system, establishing a national platform to update inventories at the national, sectoral, and sub-national levels. It will also contribute to the development of national MRV systems that comply with national and international standards in the context of NAMA implementation.

Sub-National LECRDS US\$450,000

UNDP *Sub-National Green Low Emission, Climate Resilient Development Strategy (Sub National Green LECRDS)* programme in Piura and Tumbes Region (2012-2016), focuses on sub-national planning processes to develop Integrated Regional Climate Change Plans. The project will develop detailed socio-economic analyses to identify efficient, cost effective mitigation measures that can be implemented in the short, medium and long term. The project is funded jointly by UNDP, the Government of Ontario, and the regional governments of Piura and Tumbes and has a total budget of US\$1,400,000. However only the fund provided by UNDP totaling US\$450,000 and corresponding to the components related to climate change mitigation is provided as co-financing for this UNDP-GEF project.

**C.2. How does the project fit into the GEF agency’s program (reflected in documents such as UNDAF, CAS, etc.) and staff capacity in the country to follow up project implementation:**

UNDP is one of the lead agencies of the GEF to implement enabling activities and capacity development activities related to climate change mitigation. In Peru, UNDP has supported the country in developing its First and Second National Climate Change Communication to the UNFCCC and is currently supporting the MINAM for the preparation of Peru’s Third National Climate Change Communication.

As presented above, UNDP Country Office in Peru has a strong climate change mitigation portfolio consisting of the following initiatives: LECB, Sub-National LECRDS, SMMI-LAC, UNDP-GEF Energy Efficiency Standards and Labels in Peru; and a dedicated climate change team.

Furthermore, the present UNDP / GEF Project is aligned with the Outcome 11 of the UNDAF (2012-2016) for Peru related to the strengthening of the government capacity to implement policies, programs and plans for the sustainable management of natural resources.


**PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)**

**A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):**

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
José Antonio Gonzales Norris	Director of the International Cooperation and Negotiation Office	Ministry of the Environment	03/12/2012

**B. GEF AGENCY(IES) CERTIFICATION**

**This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.**

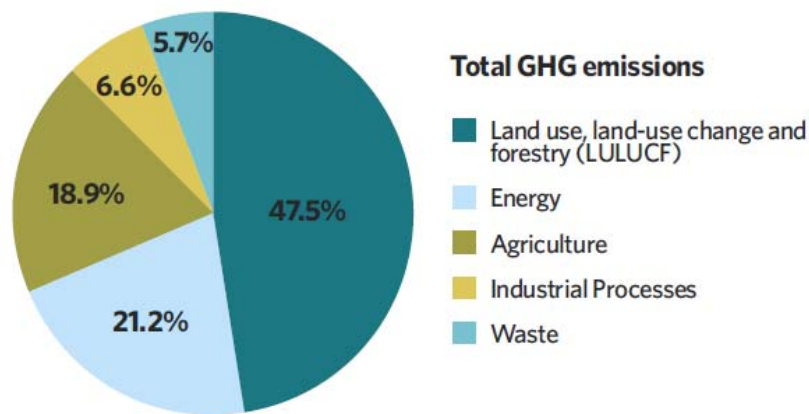
Agency Coordinator, Agency name	Signature	DATE (MM/dd/yyyy)	Project Contact Person	Telephon e	Email Address
Adriana Dinu UNDP/ GEF Officer-in-Charge		April 12, 2012	Oliver Page Regional Technical Advisor	+5073024 500	<a href="mailto:oliver.page@undp.org">oliver.page@undp.org</a>



## ANNEX I Peru's energy sector

The energy sector is the second largest source of GHG emissions in Peru, after LULUCF, with 21.2% of the country's total GHG emissions (25,400 GgCO<sub>2</sub>e/2000). (Note: This is based on the latest official GHG inventory of 2000, presented in the Second National communication to the UNFCCC. Peru is currently initiating the elaboration of the third NCCC which will include an updated national GHG inventory for 2008)

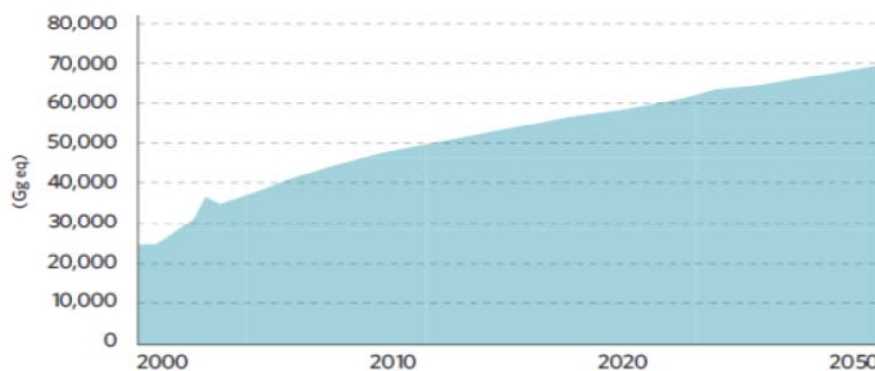
Figure 1 Percentage of GHG Emissions by Categories



Source: 2NCCC MINAM

GHG emissions from the energy sector have had a significant increase of 15% between 1994 and 2000 (2NCCC). The projections realized for the 2NCCC estimates that the emissions from the energy sector will almost triplicate in 50 years (2000-2050).

Figure 2 Projection of GHG emissions from the energy sector (2000-2050)



Source: 2NCCC MINAM

GHG emissions from the energy sector have had a significant increase of 15% between 1994 and 2000 (2NCCC). This increase is intrinsically linked with the economic growth of the country; GDP has grown of 23% during the same period. Peru has sustained high economic growth in the last decade with an average growth of 5.7% during the period 2001-2010. Despite the uncertain international context Peru is expected to remain the fastest growing

economy in the region and to maintain sustained rate of growth of around 6% for the period 2012-2014 (Multiannual Macroeconomic Framework 2012-2014, MEF).

The consumption of electricity has increased significantly, from 15,000 GWh to 25,000 GWh during the period 1995-2007 (2NCCC). In addition to economic growth, this higher demand is also related to the electricity coverage which has undergone a positive evolution from 48% in 1992 to 82% in 2010 (Osinermin). According to the latest national population census (2007), Peru has 28.2 million inhabitants, of which 76% are living in urban areas and 24% in rural areas. The projections estimate that the country will have 43 million inhabitants in 2050 (INEI).

Within this national context, the achievement of the voluntary mitigation target for the energy end-use sectors while maintaining a sustained economic growth requires a major decoupling of economic growth and GHG emissions in the energy sector, implementing a rapid transition towards a low emission development path.

### *Peru's energy matrix*

Primary energy offer in Peru is still dominated by crude oil (38,82%) followed closely by natural gas, which has steadily increased in participation since the beginning of the exploitation of the Camisea gas field in 2004. Hydrocarbons are the principal source of energy in Peru (61.8%) mainly consumed by the transport sector which is also the largest consumer of energy (37.8%). The second highest source of energy consumption is electricity production (17.7%).

Figure 3 Structure of final energy consumption by source (2009)

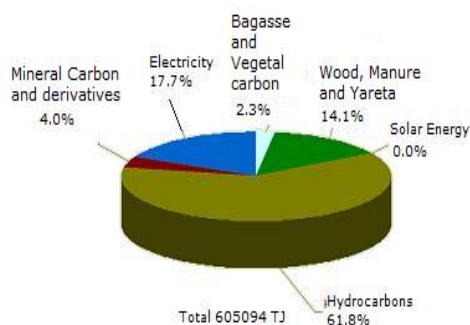
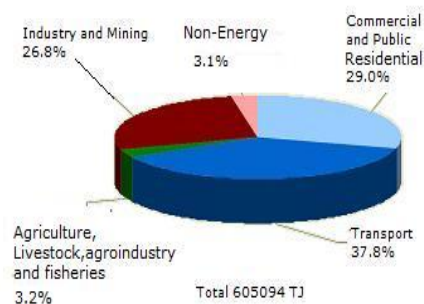


Figure 4 Structure of energy consumption by sector (2009)

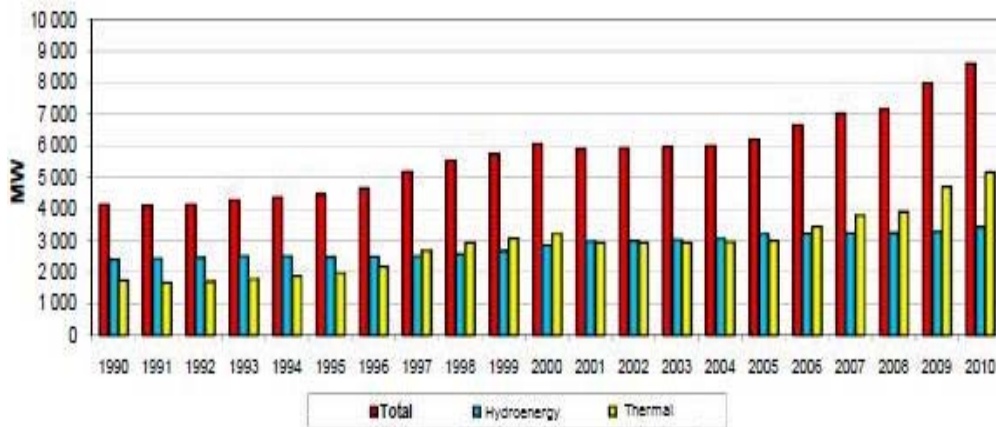


Source: National Energy Balance 2009, MINEM

### *Electricity production and demand*

During the year 2010, 35,908 GWh of electricity were produced; 56% by Hydro plants and 44% by thermal plants. The current national installed capacity is 40% hydro and 60% thermal (total 8,613 MW) (Electricity statistics 2010, MINEM), with an additional 0.7MW of wind power. The installed capacity has more than doubled in the last 20 years (1990-2010), principally with the installation of new thermal capacity which increased by 197% during this period, while hydroelectricity only increased by 43%.

Figure 5 Evolution of the installed electricity capacity



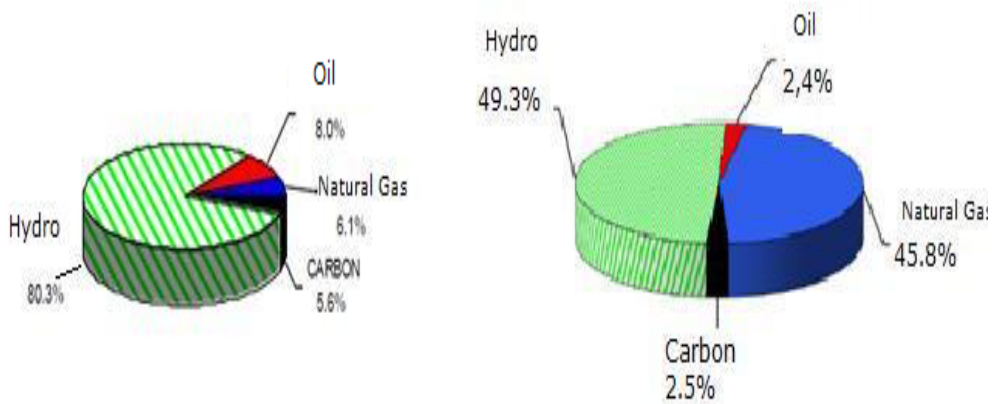
Source: MINEM

The surge in the number of thermal power plants built in the last 2 decades is due to the initiation of the exploitation of the Camisea Natural Gas field which provides thermal plants with a cheaper source of fuel. The comparison between sources for electricity production before and after Camisea clearly shows a marked difference:

Figure 6: Electricity production per type of fuel – Comparison 2003-2011

August 2003 (1743.74 GWh)

August 2011 (2892.90 GWh)



Source: Osinergia

## ANNEX II *Peru's communication of national voluntary mitigation targets to the UNFCCC*

*Embajada de la República del Perú  
en la República Federal de Alemania*

OOII/2010/03

La Embajada del Perú en la República Federal de Alemania saluda muy atentamente a la Honorable Secretaría de la Convención Marco de las Naciones Unidas sobre Cambio Climático y, por instrucciones de su Gobierno, tiene el honor de presentar oficialmente las Acciones Nacionales Adecuadas de Mitigación indicadas en el párrafo 5 del Acuerdo de Copenhague, al cual el Perú se asoció el 28 de enero pasado, mediante comunicación 14-2010-DGCCDRH/VMDERN/MINAM, dirigida a esa Secretaría.

Al hacerlo, la Embajada del Perú en Alemania desea reiterar la firme voluntad de su Gobierno de fortalecer la acción colectiva para mitigar el cambio climático, a través del desarrollo de una economía de crecimiento sostenible baja en emisiones de carbono. Con dicho propósito realizará las siguientes acciones voluntarias, de acuerdo a los principios y provisiones de la Convención Marco de las Naciones Unidas sobre Cambio Climático, particularmente sus artículos 4, párrafo 1; 4 párrafo 7; 12 párrafo 1 (b); 12 párrafo 4 y 10 párrafo 2 (a):

UNFCCC No: 1542			
Date: 24 JUNI 2010			
M-C			
Prog.	Actn	Info	IPR
EDM	✓	✓	
DES		✓	
LA		✓	
SO2			
AVS			
FTS			
INDA			
CAS			
IS			
AS			
Subject: Copenhague			

Acord

- Al año 2021, reducción a una tasa cero de la deforestación neta de los bosques primarios o naturales.
- Modificación de la matriz energética actual, a fin de que al año 2020, las energías renovables (energías no convencionales, hidroenergía y biocombustibles) representen, por lo menos, el 33% de la energía consumida en el país.
- Diseño e implementación de medidas que permitan reducir las emisiones causadas por la gestión inadecuada de residuos sólidos.

A la  
Honorable Secretaría de la Convención  
Marco de las Naciones Unidas  
sobre Cambio Climático  
Bonn

Estas medidas no excluyen el uso del Mecanismo de Desarrollo Limpio establecido bajo el Protocolo de Kyoto, ni de otros mecanismos de mercado que pudieran crearse bajo la Convención. Asimismo, para el desarrollo y aplicación de las medidas enunciadas, el Gobierno del Perú requiere contar con el decidido apoyo de la comunidad internacional, a través de la vasta gama de mecanismos financieros y de cooperación que se encuentren disponibles.

La Embajada del Perú hace propicia la oportunidad para reiterar a la Honorable Secretaría de la Convención Marco de las Naciones Unidas sobre Cambio Climático, las seguridades de su más alta y distinguida consideración.

Berlín, 21 de junio de 2010





PERÚ

Ministerio  
del Ambiente

Viceministerio  
de Desarrollo Estratégico  
de Recursos Naturales

*"Decenio de las Personas con Discapacidad en el Perú"*  
*"Año del Centenario de Machu Picchu para el mundo"*

Lima, 25 de julio de 2011

**Carta N° 055 -2011-DVMDERN/MINAM**

**Honorable Señora  
Cristiana Figueres  
Secretaría Ejecutiva de la Convención  
Marco de las Naciones Unidas  
Bonn.-**

De mi mayor consideración:

Transcurrido más de seis meses del término de la 16ª Conferencia de las Partes, realizada en Cancún, México, del 29 de noviembre al 11 de diciembre de 2010, me es grato dirigirme a usted para reiterarle la satisfacción de nuestro Gobierno por los resultados alcanzados en la misma.

En relación al documento aprobado durante dicha Conferencia, y en el espíritu del compromiso permanente que anima al Perú en su esfuerzo por contribuir positivamente al esfuerzo global contra el cambio climático, me es grato expresar la renovación de la decisión adoptada por nuestro gobierno, transmitida a la Secretaría de la Convención el 21 de junio de 2010, mediante Nota OOII/2010/03, de la Embajada del Perú en la República Federal de Alemania, y reiterada por el propio señor Presidente de la República, Dr. Alan García Pérez, en su intervención ante el 65º Periodo ordinario de la Asamblea General, el 22 de setiembre de 2010 en la ciudad de Nueva York.

Por medio de la presente comunicación, el Gobierno del Perú reafirma su voluntad de fortalecer la acción colectiva para mitigar el cambio climático, a través del desarrollo de una economía de crecimiento sostenible baja en emisiones de carbono, y expresa su voluntad de realizar las siguientes **acciones de reducción de emisiones hasta el año 2021**, de acuerdo a los principios y provisiones de la Convención Marco de las Naciones Unidas sobre Cambio Climático, particularmente sus artículos 4, párrafo 7; 12 párrafo 1(b); 12 párrafo 4; 10 párrafo 2 (a):

**1. Emisiones netas declinantes y equivalentes a cero en la categoría Uso de la Tierra, Cambio de Uso de la Tierra y Silvicultura.**

Nos proponemos alcanzar esta meta con la conservación efectiva de 54 millones de hectáreas de bosques primarios a través de nuestro Programa Nacional de Conservación de Bosques para la Mitigación del Cambio Climático y medidas complementarias en la categoría mencionada UC, con lo cual estimamos lograr una reducción de emisiones del orden del 45% con respecto al año 2000, con un potencial de emisiones evitadas del orden de los 50 MT de CO<sub>2</sub>eq.

**2. Modificación de la matriz energética nacional a fin de que las energías renovables no convencionales y la Hidro-energía, representen en conjunto por lo menos el 40% de la energía consumida en el país.**

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Esperamos lograr este cambio con la combinación de uso de fuentes renovables (solar, eólica, biomasa, mareomotriz, geotérmica) y el incremento de la eficiencia energética para disminuir el uso de combustibles fósiles, lo que significará en conjunto una reducción aproximada del 28% de emisiones en este sector en relación al año 2000, y un potencial de emisiones evitadas del orden de los 7MT CO<sub>2</sub>eq.

### **3. Captura y uso de metano proveniente de la disposición adecuada de residuos sólidos urbanos.**

Para este fin se realizara programa de alcance nacional con prioridad en la construcción de rellenos sanitarios en 31 ciudades grandes y medianas del país y eventuales instalaciones complementarias, que permitirán reducir un estimado de 7 MT de CO<sub>2</sub>eq.

Para el desarrollo y aplicación de las medidas enunciadas, como se mencionó en junio de 2010, y fue reiterado en nuestra presentación durante los talleres inter - sesionales de Bangkok en abril de este año, nuestro Gobierno requiere contar con el decidido apoyo de la comunidad internacional a través de los mecanismos financieros y de cooperación que estableció la COP16, así como de aquellos que ya se encuentran en funcionamiento y disponibles.

Adicionalmente, le informamos que el 09 de julio de este año, el Gobierno Peruano aprobó un Plan Nacional de Acción Ambiental al 2021, en el cual se establecen objetivos y acciones que incorporan los compromisos enunciados, cuyo cumplimiento se orienta a la consecución de una economía nacional baja en carbono.

Hago propicia la oportunidad para reiterar a usted, Señora Secretaria Ejecutiva las seguridades de mi más alta consideración y estima personal.

Atentamente,

Rosario Gómez Gamarra  
Viceministra de Desarrollo Estratégico de los Recursos Naturales  
Punto Focal del Perú ante la Convención Marco de las Naciones Unidas  
sobre Cambio Climático

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